



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,075	01/28/2004	Osamu Kogi	HIRA.0137	9475

7590 10/05/2005

Reed Smith Hazel & Thomas LLP  
Suite 1400  
3110 Fairview Park Drive  
Falls Church, VA 22042-4503

EXAMINER
----------

BROWN, JAYME L

ART UNIT	PAPER NUMBER
----------	--------------

1733

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/765,075

Applicant(s)

KOGI ET AL.

Examiner

Jayme L. Brown

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2004 and 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3 and 5-12 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/18/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group II, claims 2-12 in the reply filed on 9/6/05 is acknowledged.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) filed on 8/18/04 has been considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "the liquid pool" in lines 4, 9, and 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the liquid pool" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 7, the steps of "disposing the bead alignment structure in the capillary; and introducing the beads comprising the plurality of beads retaining one- or

Art Unit: 1733

two-dimensional alignment simultaneously into the capillary" are the same step. This step should be rewritten as such:

-- disposing the bead alignment structure comprising the plurality of beads retaining one- or two-dimensional alignment into the capillary --.

Regarding line 3 of claim 8, "predetermined and order" should be changed to -- predetermined order --.

Claim 10 recites the limitation "the liquid pool" in lines 4, 9, and 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the liquid pool" in line 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 3 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fu et al. (U.S. Patent 6,863,847).

Regarding claims 2 and 3, Fu et al. teaches a method for producing an integrated bead alignment structure comprising the steps of aligning a plurality of beads one- or two-dimensionally in a predetermined and desired order outside a capillary; and bonding the plurality of beads to each other while the bead alignment is retained (Column 3, lines 8-12; Column 4, lines 26-61; Column 6, lines 31-42; Figure 1). It is inherent that the beads are aligned; therefore, Fu et al. anticipates claims 2 and 3. In the alternative, it would have been obvious to one of ordinary skill in the art at the time the invention was made to align the beads in order to get the desired structure.

7. Claims 2 and 3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ito et al. (U.S. Patent 6,096,159).

Regarding claims 2 and 3, Ito et al. teaches a method for producing an integrated bead alignment structure comprising the steps of aligning a plurality of beads one- or

Art Unit: 1733

two-dimensionally in a predetermined and desired order outside a capillary; and bonding the plurality of beads to each other while the bead alignment is retained (Column 6, line 32 – Column 7, line 54; Figures 3C and 4A-4D). It is inherent that the beads are aligned; therefore Ito et al. anticipates claims 2 and 3. In the alternative, it would have been obvious to one of ordinary skill in the art at the time the invention was made to align the beads in order to get the desired structure.

***Allowable Subject Matter***

8. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 7-12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

10. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 4, the prior art of record fails to teach or suggest the claimed method of aligning the plurality of beads in a liquid pool, producing a bead alignment structure by bonding the beads to retain the bead alignment.

Regarding claim 7, the prior art of record fails to teach or suggest disposing the bead alignment structure into the capillary.

Fu et al. and Ito et al. all fail to teach or suggest using a liquid pool to align the beads or disposing the beads into a capillary after they are bonded.

Kambara et al. (WO 00/61198) is directed to a method of producing probe arrays for biological materials using fine particles. Kambara et al. teaches that small beads are aligned in a designated manner in a groove produced on a plane surface, then congregated into a probe array or transferred into a capillary (with a liquid flow) to produce a probe array. The reference fails to teach or suggest using a liquid pool for alignment or bonding the beads prior to transferring them into the capillary.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jayme L. Brown** whose telephone number is **571-272-8386**. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Jayme L. Brown*

Jayme L. Brown

*John T. Haran*

JOHN T. HARAN  
PRIMARY EXAMINER